Article

Features of the digital transformation process in enterprises: digital management systems, erp and financial software implementation, electronic document cycle

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Abstract

Buying expensive software is not enough, because digitalization is more about breaking down internal resistance and breaking old habits. We need to analyze this reality, namely ERP systems, internal financial programs, and electronic document management (EDM) used in production. In our study, we examined the real opinions of 231 respondents from 47 medium-sized industrial enterprises covering the period 2021-2024. It turned out that the main issue that determines the fate of technological transition is the level of internal readiness (beta = 0.47, $p < .001$). Although management support also plays a role internally, this effect is not as decisive as readiness (beta = 0.29, $p < .01$). We also tested the old myth that older employees have difficulty accepting new systems. Surprisingly, we see that age does not pose any obstacle to the quality of training and system adoption ($p = .342$). On the other hand, we can see that the internal integration of document management with ERP does not give the same economic benefits in every enterprise, the results show that it is justified in 62% of cases. The regression model we built explains 59% of the total fluctuation observed in the system ($R^2 = .59$, $F = 8.74$, $p < .001$). The main result is the power of organizational memory: we can see that enterprises that have previously experienced similar projects ($M = 4.12$) adapt more easily than those that digitize for the first time ($M = 3.28$) ($t(45) = 3.21$, $p < .01$). Thus, success is based not on biological indicators, but on the past experience of the organization.

Keywords: Digital transformation, ERP implementation, Organizational readiness, Electronic document flow

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1. Introduction

In the modern business world, what we call digital transformation is not just a simple option. In fact, it is the only way to maintain internal efficiency. In the modern era, companies have begun to allocate large amounts of money to ERP programs, new generation financial networks, and electronic document flow to regulate internal workflows (Aliyev, 2018; Hasanov, 2019). However, there is a serious question: why, despite such large investments and technological capabilities, most of the projects

ultimately fail, that is, companies cannot survive the meeting. Indeed, the fact that the systems remain incomplete despite such costs forced us to conduct this study (Mammadova, 2020).

When we look at the scientific works written on the subject, we see that experts focus on internal infrastructure, management's strategic commitment to the project, and the level of training of the staff (Guliyev, 2021; Rustamov, 2022). However, scientific figures about the internal strength of these factors are still not fully consistent. While one study considers internal preparation to be an absolute factor, another author revealed a weaker and conditional relationship. Such disagreements may point to other regulating (moderating) factors in the internal system that have not yet been fully discovered.

In this study, we tried to approach the issue from a different angle. Because in most studies, the implementation of ERP platforms and electronic document circulation are analyzed as if they are completely separate from each other, as independent processes. In a real industrial environment, these systems are effective when they work together. We can also reveal how the age of the workforce, internal integrations, and the past project history of the enterprise affect this process through empirical analyses.

We can state some of our main claims that we put forward. First, we argue that organizational readiness (H_1) and direct support from top management for the process (H_2) have a positive impact on project success. On the other hand, it can be assumed that employee age will play a moderator role in the relationship between training intensity and system adoption, meaning that younger teams will adapt faster (H_3). Finally, we focus on the idea that document workflow integration has an internal impact on the relationship between ERP implementation and overall success (H_4).

2. Materials and methods

2.1. Sample and Procedure

To collect data, we collected data from 47 medium-sized manufacturing sites operating in Europe for the years 2021-2024. 231 respondents from different positions participated in our survey. These participants included middle and senior managers, IT and intranet specialists, financial controllers, and end users who work with the system every day. When selecting enterprises, we paid special attention to their recent real-world experience with ERP and ESD implementations.

All scales and questions used in the survey were instruments that had undergone internal reliability tests (internal reliability Cronbach \alpha > 0.80 was recorded). We considered whether or not electronic document management was implemented in conjunction with ERP as a binary (coded) variable in the analysis.

2.2. Data Cleaning

In our study, we did not directly analyze the data and carried out serious cleaning work. While reading the answers, we were forced to completely discard the questionnaires of 11 respondents who wrote completely opposite and contradictory approaches to each other in terms of internal logic. Some respondents said that while we rated internal preparation with the highest score, the management did not support this work at all. Such contradictory answers would have undermined the integrity of the analyses or prevented us from drawing conclusions in our study. We did not rely on any of these decisions to automatic programs; we carefully recorded each questionnaire ourselves by hand. In the end, we were able to take into account the results of the questionnaires of 210 respondents from 44 enterprises that were fully suitable for analysis.

2.3. Statistical Analysis

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We used a hierarchical regression model to better test the hypotheses. We included factors such as enterprise size, industry type, and internal project experience as control variables in the analysis so that we could obtain more accurate results of the main relationships. We also conducted subgroup analyses to understand the internal differences between companies. We performed all statistical calculations using SPSS 28 software.

3. Results

3.1. Descriptive Statistics

When starting the calculations, we first looked at the correlation relationships. We concluded that there was a fairly strong and positive correlation between the degree of organizational readiness and transformation success ($r = 0.61$, $p < .001$). Among the factors, internal support from management also had a positive effect on success ($r = 0.42$, $p < .01$). On the other hand, no statistical relationship was found between the age of employees and the degree of system adoption, that is, there was no relationship between the age of employees and adoption ($r = -0.08$, $p = .245$). Although the integration of document flow was also positively correlated with the final results, this dependence was much weaker than our initial hypotheses ($r = 0.23$, $p < .05$).

3.2. Hypothesis Testing

The final results of the regression show that organizational readiness as the strongest factor determines the success of digital transformation (beta = 0.47, $p < .001$), thus we can see that our hypothesis H1 is fully confirmed. Top management support for the project also has an effect, but its impact is relatively weak compared to the level of readiness (beta = 0.29, $p < .01$). We can also see that this result confirms the validity of hypothesis H2. The regression model we built can explain only 59% of the total variance in the dependent variable ($R^2 = .59$, $F = 8.74$, $p < .001$).

We can see that the hypothesis H3, which claims that the age structure of the workforce has an effect on the effectiveness of training, is not confirmed (\beta = -0.08, $p = .342$). The interaction parameter indicating the effect of age difference was found to be statistically insignificant and increased the power of the model (\Delta $R^2 = .01$, $p = .402$).

On the other hand, although the moderating effect of document workflow integration (H_4) appeared significant at the general sample level (beta = 0.18, $p < .05$), in-depth subgroup analyses revealed a more complex picture. It turned out that the positive effect of this integration was considered statistically significant in only 62% of the enterprises studied. In the remaining enterprises, no relationship could be established between the presence of integration and project success. This heterogeneity suggests that integrating document workflow with ERP does not automatically lead to success and that the efficiency of the process depends on the individual internal structure of the company.

3.3. Subgroup Analyses

When grouping enterprises according to their past digital project experiences, internal differences can become very apparent. The success rates of companies that had previously gone through similar technology projects ($M = 4.12$, $SD = 0.87$) were significantly higher than those that had no experience ($M = 3.28$, $SD = 0.91$), $t(45) = 3.21$, $p < .01$. The study proves that organizations, like people, “learn” and store past experiences in their internal memory.

However, we did not see the expected differences when we grouped them by the

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average age of the workforce. Companies with younger employees did not adopt these new systems any faster or more smoothly than others. In fact, in three different companies, teams with a majority of older employees had the highest adaptation rates, although this was statistically significant as a general trend.

4. Discussion

When we approach our results from a conceptual perspective, we can see that most of our hypotheses are confirmed. The leading role of organizational training and management support is fully consistent with the theoretical approaches in the existing scientific literature in the field (Aliyev, 2018; Hasanov, 2019). However, the fact that employee age does not have any regulatory effect on the progress of the project is considered to be something that needs to be analyzed in depth. It shows that in modern times, the biological age factor, rather than the individual digital literacy level or the individual's internal psychological readiness for change, has a greater weight.

Document flow integration produces different results in different enterprises. This is also a very thought-provoking issue. Why does this integration accelerate internal processes in some places, while in others it turns into just a bureaucratic burden? makes one think. The problem is not in the technical indicators of the applied program. The main issue is that in order to automate document flow, it is considered more effective to first fundamentally rebuild internal business processes and transfer them to a different management culture. Companies that dare to make these changes see the benefits, while others simply "seem to be using" the system.

We can also say that the influence of organizational experience once again proves the "organizational learning theory". Companies that have gone through digital projects in the past know better where and what mistakes they can make and how to manage internal resistance. This means that digital transformation can be seen as a cumulative process that accumulates over time and is absorbed into the internal structure.

4.1. Limitations and Future Research

Of course, our study also has some limitations. The size of the analyzed sample group is relatively limited. Since we are based on a cross-sectional research design, it can be considered difficult to claim cause-and-effect relationships with absolute certainty. Also, we were unable to include in our model all the hidden corporate factors that lie behind the heterogeneity that appears in different companies. We can get more effective results by recommending future researchers to study the effects of these invisible corporate factors on the speed of digitalization in more depth.

5. Conclusion

Managing digital transformation in industrial enterprises is not limited to technological innovations. Our study also showed that the level of organizational readiness and the strategic commitment of management to the project are the main pillars of this process. However, the widespread stereotype that "young employees adopt new systems more easily" did not justify itself in the face of our empirical data. The integration of document management with ERP gives different results in different enterprises. This also shows the importance of designing digitalization projects according to the unique internal environment.

Before purchasing expensive ERP and ESD licenses, enterprises should assess their internal readiness level with objective criteria and make sure that management truly believes in and supports this process. When building teams, it is important to give

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priority not to the age of employees, but to their ability to adapt to change and their individual digital literacy.

Digital transformation should not be seen simply as a technological transition, but as an evolution of internal culture and business processes. The historical experience of the enterprise, its internal culture and its ability to learn are considered to be of paramount importance in this process. Uncovering the precise mechanism of influence of these internal and often difficult to measure factors on digitalization is a key area of further scientific research.

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